• COLORADO RIVER •

# AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. IX MARCH 30, 1942 No. 3

## Three Dry Winter Months Now Remind Southern California of Water Needs

Despite the absence of current weather news in the columns of the press in these days of war, there has been something in the air—or a lack of something—that has given the people of Southern California the impression that they have been passing through a winter season not particularly notable for the downfall of great quantities of rain.

With the view of checking the truth or fallacy of a popular and growing suspicion that the weather in this corner of the world has been just a little on the dry side, C. C. Elder, Hydrographic Engineer for the District, has been asked to supply the facts and figures.

Here is Mr. Elder's statement:

As usual, the weather in Southern California—and elsewhere—is continuing to perform the proverbial unusual. But here in the cities of the Metropolitan Water District, at least, no one any longer really needs to do anything much about it, now that the Colorado River Aqueduct is in operation with 40 billion gallons of water stored in its terminal reservoirs constantly ready for any major emergency or drought demands that may arise.

A few days ago newspaper headlines revealed to us that premature and torrential cloudbursts in the Markham Valley in New Guinea had done a most timely and thorough job of washing out, and, let us hope, up, an army of Jap invaders that had sought to advance across that region toward strategic Port Moresby—and Australia. Within a few days this downpour had exceeded 40 inches and, when last reported, was continuing. The deluge exceeds the recorded annual average rainful in that territory, and is considerably more than the Los Angeles area has ever received in any 12-month period of record. It is almost three times the annual average for this section of the country.

Simultaneously, on the opposite side of the world, some damage and much discomfort resulted in Washington, D.C. from an unseasonable storm that left 12 to 18 inches of snow on the ground to block traffic already sufficiently scrambled.

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## Terms of Aqueduct Service Set Forth

Enouncing a policy authorized by the Board of Directors, Chairman W. P. Whitsett, in a recent statement, set forth the terms and conditions upon which Colorado River Aqueduct water deliveries and stand-by service will be made available to areas not now within the boundaries of The Metropolitan Water District of Southern California.

Chairman Whitsett said: "During the past several months the Board of Directors has been requested to permit certain areas outside the boundaries of the District to connect their local water systems with the Colorado River Aqueduct distribution lines. These connections are desired for the purpose of giving the outside areas the protection of a dependable and abundant water supply in the event of a sudden emergency or a shortage in their local sources.

"At the time the Aqueduct was being planned and constructed, it was understood that the system initially would serve as a supplemental water supply source for District areas, and that its

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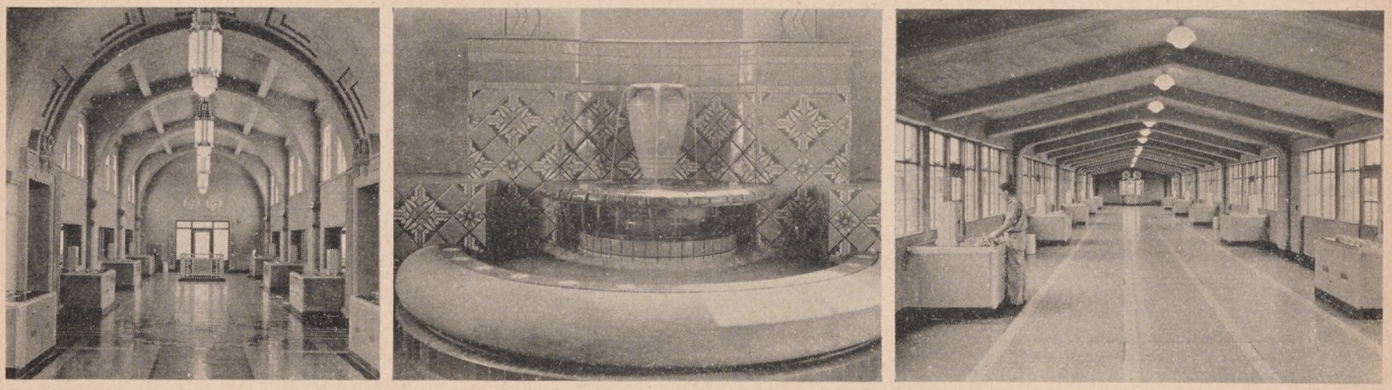

**Interior views of the Softening and Filtration Plant. (Center) Fountain in the zeolite control room. (Left) General view of the zeolite control room, where an important phase of the softening process is regulated. (Right) Filter control room. In this modern plant, where the District's water supply is softened to make it ideally adapted for domestic and industrial use, and filtered crystal clear and pure, the watchword is spotless order and scientific precision.**

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## Service Terms

(*Continued from Page* 1)

greatest benefit during early years of operation would be the security against the possibility of a water shortage afforded through the stand-by service of the Aqueduct. It was this stand-by service, as well as actual water deliveries for a day-by-day use, for which the citizens of the District cities invested approximately $190,000,000.

"Since the completion of the Aqueduct, the prime importance of possessing multiple water sources and an ever ready stand-by supply of water has become increasingly apparent to rapidly developing areas in Southern California.

"Within the area of the District are many industrial plants engaged in production for war purposes. Being located within the District, these plants are assured of an ample and dependable water supply, and through taxation these same plants are making substantial contributions to the cost of the Aqueduct's stand-by services. Under these circumstances, the District could not favorably consider the extension of the benefits of Aqueduct stand-by service to areas not within the District upon the mere assumption by such outside areas of the physical costs of the connections and an agreement to pay for water as and when taken.

"The District is entirely willing, however, to extend its water service to these neighboring areas upon the same basis that such service is now available to cities within the District."

Chairman Whitsett pointed out that the District has cooperated to the fullest extent possible in making Aqueduct water available to United States military establishments which may be located outside the District area but within reach of Aqueduct service. Such service is now being rendered to March Field and Camp Haan, and arrangements have been completed to provide Aqueduct water to Army training centers being established on the Colorado River desert.

## Dry Season Returns

(*Continued from Page* 1)

Meanwhile, to keep the world's general average nicely balanced, meteorologically at least, Southern California has just completed its third successive month of extreme drought — three months normally counted as constituting the greater part of the rainy season.

The year 1942 started with an accumulated excess of rainfall, as a result of a wet Christmas, and storms on New Year's Day seemed to promise equally well for the remainder of the winter. Normally, January to March must here furnish 60% of the entire year's rainfall, or about 9 inches. This year, however, the total for these three most critical months is but 2.9 inches, or less than one-third of their average yield and only one-eighth as much as fell in the same three months of 1941. So, in spite of the previous credit balance, the total since July 1, 1941 is now merely 8.74 inches, or 64% of the normal.

Such severely dry spring seasons have, of course, occasionally been recorded previously here in semi-arid Southern California. Similar or worse spring periods are noted as occurring four times, in fact, in the last quarter of the nineteenth century, and a fifth year was almost as dry.

The definite tendency of such dry seasons to occur in series or groups is very evident from the record, just as wet years also have been doing here recently. The five-year period, 1937 to 1941, averaged 50% above normal rainfall, with 4 of the 5 years being far above the 65-year average. It is the wettest such period in the full period of Weather Bureau records. All available studies indicate it likewise to have been the wettest five-year period since the founding of Los Angeles in 1769. For these same five recent years, the spring months, January to March, averaged 14.6 inches of precipitation, 63% above their normal amount, and practically equal to the annual average rainfall at Los Angeles.

The effect of such a sustained wet period is still evident in the water tables of several of the local ground-water basins, such as San Fernando and Upper San Gabriel valleys. In other important basins where large overdrafts have long been known to exist, the wet years have merely served to retard the previous rate of water-table lowering. Examples are the West Coast basins near Los Angeles, the great Chino basin of West San Bernardino County, and also parts of Orange County. In these localities, where marked recovery of the water table did not occur even with the excess rainfall of 1937-41, a renewed rapid lowering of water levels now seems inevitable. This is due not only to the present lack of replenishment but to the increased pumping demands caused by war-time activities and increased population growth accompanying the emergency industries; likewise, to the immediate increase in irrigation pumping due to the dry spring with respect both to rate of extraction and also to the lengthening of the irrigation season, already long underway in most localities here.

## - DIRECTORY -

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Franklin Thomas, Vice-Chairman

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| | |
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| Chief Electrical Engineer | J. M. Gaylord |
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### DIVISION ENGINEERS

| | |
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| Field Supt., Pumping Plants | T. T. Walsh |
| Maintenance Engineer, Aqueduct and Transmission Lines | Robt. N. Allen |
| Softening Plant Engineer | W. W. Aultman |

# • MONTHLY REPORT •

**(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager Julian Hinds, filed with the Board of Directors in March, 1942, covering work done in February.)**

### Construction

*Parker Power Plant*—The walls of the power house have been practically completed by the U. S. Bureau of Reclamation crews and the steel roof girders are now being set on their columns. Steel spiral casing for Unit No. 1 is being installed and the draft tube liner was set for Unit No. 3. Concreting work for the intake structure in the forebay is nearing completion and all circuit breakers thus far received are in position on their foundations in the switchyard. All flow through the spillway gates was stopped for 8 hours on February 27 to permit pipe connections through the river wall and allow the Indian Service to complete some necessary work at the Headgate Rock Dam.

### Operation and Maintenance

*General*—Additional guards authorized by the Board of Directors were being hired to augment the emergency patrol and guard service which is being maintained throughout the entire aqueduct. The pumping plants were inspected by an officer of the State Guard of California and a report on the advisability of using the State Guard for aqueduct protection is expected. The District is cooperating with the Los Angeles County Defense Council in working out plans for repair of utility services in the event of an air raid or sabotage. Negotiations for the sale of surplus Boulder energy for magnesium production near Boulder City continued throughout the month. Water for testing was turned into the Camp Haan supply line which was completed during the month. Construction of the water treatment plant at the camp is in progress.

*Design*—Specifications for chlorination equipment to be used principally at the Eagle Rock control structure were prepared. Data were assembled relating to water requirements and method of supply for the coastal area between Venice and San Pedro. Details were prepared for metalwork assemblies required for existing features and for installation of recording devices.

*Parker Dam*—The water surface of Lake Havasu rose from elevation 435.7 to 441.3 on February 27 due to closing of the gates. Reclamation Bureau crews continued, in addition to routine operation and maintenance, sandblasting and painting the spillway gates.

*Main Aqueduct*—All patrol roads in the Coxcomb-Eagle section were repaired and bladed, and work was completed on the repair and deepening of parallel drains in this area. The Gene-Camino patrol road was also repaired.

*Pumping Plants*—In order to stabilize the system under the load since the District ceased to deliver power to Phoenix, and at the request of the director of power at Boulder, one pump was operated at Intake. No charge is made for water pumped into Gene Reservoir, released through Gene Dam outlet valve and returned to Lake Havasu.

*Distribution System*—In order to permit accurate measurement when low flows of water are released from storage, a float well is being installed at Station 117. Storage in Lake Mathews showed a decrease of 370 acre feet during February. There was no interruption of the operation and maintenance, including laboratory activities, at the softening and filtration plant. Along the distribution system, maintenance of emergency patrol and guard service continued in conjunction with general clean-up and repairs. The electrolysis survey along the upper feeder between Lake Mathews and Fontana was continued through February.

*Hydrographic*—Meetings of the Colorado River Board of California were attended and assistance was given a joint water problems committee of the California Legislature which visited portions of the aqueduct and other water projects in Southern California and southwestern Arizona.

*Employment*—Two classified positions were filled during February. There were recorded 3 changes of status, 12 terminations and 4 employment contracts, and 104 persons were interviewed. The net turnover for all positions for January 1942 was 3.46 per cent compared with 1.42 per cent for January 1941.

*Purchasing and Salvage*—A total expenditure of approximately $10,550.00 was covered by issuance of 232 purchase orders during February. Carload forwardings consisted of 20 cars of salt and 3 cars of other chemicals. Total salvage disbursements to date amounted to $1,764,587.34, including cash sales amounting to $12,919.76 during the month. At the end of the month salvage stock on hand was appraised at $496,463.11.

## Printed Copies Of Annual Report Ready

Presenting a detailed and authoritative account of the development of the Colorado River Aqueduct project and the District's engineering, construction, legal and financial operations and problems, the Report of the General Manager and Chief Engineer for the period from July 1, 1940 to June 30, 1941 is now available in printed form. Copies of the report will be distributed to officials and citizens of the District to the full extent that the supply permits.

An introduction to the report contains an interesting and factual summary of the history of the District and the Aqueduct project, and an outline of the local water resources of Southern California and the conditions which necessitated the building of the Aqueduct.

Drawing attention to the remarkable development of Southern California and the consequent increase in the need for additional water supplies, the introduction to the report states in part:

"The District area is rich in natural resources and during the four decades of this century has experienced a phenomenal growth, retarded temporarily by the trying years following 1929, but now again advancing in full stride. This period saw the development of the Los Angeles-Long Beach harbor and its expansion to one of the world's leading ports; the creation of the motion picture industry; the discovery and development of vast petroleum and natural gas resources, and construction of tank farms and refineries; the building of hydroelectric and steam power plants, and a network of transmission lines covering the entire area; the unparalleled and withal substantial expansion of aviation and airplane plants; the introduction of a multitude of industries, large and small; the continued improvement of valuable agricultural lands; the rapid multiplication of subsistence farms and country estates; the most minute and efficient development of local water supplies; all accompanied by rapid increases in property values, wealth, and population.

"This extraordinary progress has been made in the face of a definitely limited water supply. Southern California is naturally semi-arid. The rainfall is erratic and averages only about 15 inches per year, varying, however, during the last 64 years, at the Los Angeles station, from a minimum of 5.59 inches to a maximum of 38.18 inches."

# NEWS FROM FIELD AND OFFICE

**Scanning the skies. Somewhere out on the vast spaces of the Colorado River desert, an Aqueduct lensman snapped this one of Fred S. Crawford, Machinist at Hayfield Pumping Plant. In addition to his regular work at the plant, Crawford, in common with a number of other District field employees, takes his turn as an Air Raid Warden at one of the several observation stations in the general vicinity of the Aqueduct.**

For the second time within three years, William Paul Winn, Assistant Engineer in the Electrical Division, made a tour of the Los Angeles office building with boxes of candy and cigars. This time the tour was for the purpose of announcing the arrival of Robert Thomas Winn, 8 pounds even, on March 20.

Hugh Jones, who started working on the Aqueduct project back there in the early survey days of 1929, resigned from his position with the District on March 27 to assume new engineering duties with Macco-Robertson, Ltd. Starting as a draftsman, Hugh for several years was an engineer in the Distribution Division, and since the Aqueduct has been on an operating basis he has been engaged in engineering work under the direction of Chief Aqueduct Operation and Maintenance Engineer R. B. Diemer.

Clouds of dust swirling over portions of Los Angeles, Glendale, Pasadena, Beverly Hills, Santa Monica, Torrance, San Marino, Burbank and other District cities during the early morning and evening hours the past several weeks, and especially on Saturday afternoons and Sundays, are not the result of local wind storms. They mark the spots where District employees are making the dirt fly on Victory gardens.

Word comes that E. F. (Ed) Miller, formerly Assistant Purchasing Agent for the District and more recently Purchasing Agent for Bechtel-McCone-Parsons in Orange, Texas and San Pedro, is now performing the same services for the same company in San Francisco. Associated with him is another former District man, Dave Koontz.

**Eugene V. (Gene) Reynolds, Foreman of the District's Los Angeles garage, and former President of the Employees Association, now has still another title. It's Rationer of Rotating Rubber. When District work positively requires the use of an automobile, Gene will occasionally permit a car to leave the garage, but reluctantly, and with the stern admonition: "Easy on the brakes, fella, and keep it under 40!"**

Through the medium of the Employees Credit Union, all field and office employees these days actively are being urged to up their ante in the purchase of War bonds and stamps. With many former District employees doing front line duty on the far-flung islands of the South Pacific, the men and women now operating and guarding the Aqueduct know what it will take to win this war.

**Springtime on the Colorado River. Tamed and regulated by Boulder and Parker dams, the old giant of the Southwest these days peacefully flows down a channel carved out between frowning granite bluffs and leafy banks.**